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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,971	11/14/2005	Torgny Palenius	P16264US2	6769

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EXAMINER	
LOFTIN, CELESTE	
ART UNIT	**PAPER NUMBER**
2617	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/507,971	PALENIUS ET AL.	
	Examiner	Art Unit	
	Celeste L. Loftin	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant argues that Moulsley discloses that the timing of the virtual cell on an average or spread of the cells in the active set and not selecting on one cell as the reference.

To further clarify, Moulsley discloses that it may not be necessary to mandate the precise method for calculating Tau, but the MS could be permitted in soft handover to offset the UL transmission from the first significant received path of the first BS. To one of ordinary skill this can be interpreted to mean that the reference cell is defined with reference to one downlink (i.e. the received path of the first BS).

3. Applicant also argues that Moulsley does not disclose the offset is relative to one or more cells in the active set.

In combination with Moulsley discloses using one received path, the limitation "or more" suggests that the virtual reference cell can be defined by more than one cell. The prior art teaches that Tau can be calculated from the first BS in the active set and each of the significant paths of all BSs in the active set.

4. Applicant argues that Moulsley does not disclose using a real cell as the reference cell.

However, the MS may transfer to another BS when the relative traffic loading of different cells requires adjusting. Therefore, if the offset is based on the received signal

from the BS for handover purposes it can be understood that the BS must be located in another cell (i.e. real cell).

5. Applicant argues that Moulsley does not disclose with reference to the active cell which first joined the active set. However, Moulsley does disclose adjusting the timing to To after the first or last received significant path from the BS.

6. Applicant argues that nothing contained in cited paragraphs are relevant to using the strongest cell as the reference. However, Moulsley does disclose increasing power in response to an earlier received BS [0031] and it also discloses a power change based on received signals [0030]. To further clarify Moulsley discloses if the signal form the first received BS was weaker than the signals from other BSs received later, then MS could report the stronger so that the network arranged for its timing could be advanced.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Moulsley et al. (Moulsley), **US Publication 09/951,860.**

Regarding claim 1, Moulsley discloses a method of defining an uplink transmission frame timing, for use in a mobile communications system in which a user equipment may have radio links with a plurality of cells, and in which the cells with which the user equipment has radio links define an active set (in a version of this process (soft handover) the MS engages in communication with a plurality of BSs, which is known as the active set, when the quality of the communication link deteriorates s the MS moves away from its BS or when the relative traffic loading of different cells require adjusting) **(pg. 1, paragraph [0005])**, wherein the uplink transmission frame timing is defined with reference to the downlink transmission frame timing of a reference cell selected from said active set (defining a limitation that the reporting range must be symmetric about the downlink timing reference, this enables the uplink timing reference to be offset from it by To+tau, where tau is an additional offset which could be calculated from received signals rather than being predetermined) **(pg. 4, paragraph [0045])**,

the method comprising:

when the reference cell is removed from the active set, defining a virtual reference cell, the timing of which is defined with reference to one or more of the cells remaining in the active set, such that the timing of the virtual reference cell corresponds to the timing of the previous reference cell (in some soft handover situations, when a reliable down command is received from the earliest (first reference cell) there is no need to wait for further power control commands to arrive and it may increase the power based on any reliable down command received later, the offset or the timing reference

has the advantage of relating the uplink transmit timing to the signals actually received in the active set, this reduces the reporting the BSs for being outside the valid range (it can be concluded that as the MS receives commands form the BS it will calculate the offset based on the reporting range of each BSs or all of them and the MS could be permitted in soft handover to offset the UL from the first significant path)) **(pg. 1 paragraph [0005], pg. 2 paragraphs [0030], [0031], pg.4 paragraph [0045], [0052], pg.5 paragraph [0071])** ; and

defining the uplink transmission frame timing relative to the timing of the virtual reference cell (define a limitation that the reporting range must be symmetric about all the downlink timing reference. This enables the uplink timing reference to be offset form it by To +tau chips where tau is an additional offset which could be calculated from the actual spread of signals received) **(pg. 4, paragraph [0045]).**

Regarding claim 2, Moulsley discloses a method as claimed in claim 1, wherein the uplink transmission frame timing is defined to be a fixed time after the virtual reference cell timing (in normal operation, the uplink timing reference is typically a predetermined offset To from reception of the first significant signal path from a BS, with To defined to be 1024 plus/minus 1.5 chips) **(pg. 4, paragraph [0039]).**

Regarding claim 3, Moulsley discloses a method as claimed 2, for use in UMTS, wherein the uplink transmission frame timing is defined to be To (=1024 chips) after the virtual reference cell timing (in normal operation, the uplink timing reference is typically a predetermined offset To from reception of the first significant signal path from a BS, with To defined to be 1024 plus/minus 1.5 chips) **(pg. 4, paragraph [0039]).**

Regarding claim 4, Moulsley discloses a method as claimed in claim 1, wherein the virtual reference cell timing is defined with reference to the active cell which first joined the active set (setting the uplink transmit timing according to the dimensions of the reporting range (the reporting range is entirely positive with the respect to To, the frequency of reporting will be minimized by adjusting the uplink timing to To chips after the first significant path of the first BS to be received)) **(pg. 4 paragraph [0061], [0062], pg.5 paragraph [0063]).**

Regarding claim 5, Moulsley discloses a method as claimed in claim 1, wherein the virtual reference cell timing is defined with reference to the active cell whose downlink transmission timing most closely corresponds to the downlink transmission timing of the previous reference cell (such a means of calculating the uplink transmit timing to the signals actually received, if the signals from all the received very close together or very widely dispersed, this approach would help to keep the receive timing centrally within the reporting range, thus minimizing the frequency of reporting BSs for being outside the valid range, and the MS makes a change in power based on the initial estimate, however after receiving later signals the power can be changed) **(pg. 2, paragraph [0030] [0031], pg. 4, paragraph [0054]).**

Regarding claim 6, Moulsley discloses a method as claimed in claim 1, wherein the virtual reference cell timing is defined with reference to the active cell from which the strongest signal is being received such a means of calculating the uplink transmit timing to the signals actually received, if the signals from all the received very close together or very widely dispersed, this approach would help to keep the receive timing centrally

within the reporting range, thus minimizing the frequency of reporting BSs for being outside the valid range (it is known in the art that as the MS drifts away from the BS the signal strength decreases), and the MS makes a change in power based on the initial estimate, however after receiving later signals the power can be changed) **(pg. 2, paragraph [0030] [0031], pg. 4, paragraph [0054], pg.1 paragraph [0005]).**

Regarding claim 7, Moulsley discloses a method as claimed in claim 1, wherein the virtual reference cell timing is defined with reference to the average timing of all of the cells in the active set (the limitation that the reporting range must be symmetric about the downlink timing reference, the offset can be calculated based on the weighted average of the number of chips between the arrival of the first significant path of the first BS in the active set and the first significant path of all BSs in the active set) **(pg. 4 paragraphs [0045], [0051]).**

Regarding claim 8, Moulsley discloses a communication device, for use in a mobile communication system in which a mobile communication device may have radio links with a plurality of cells, and in which the cells with which the device has radio links define an active set (in a version of this process (soft handover) the MS engages in communication with a plurality of BSs, which is known as the active set, when the quality of the communication link deteriorates s the MS moves away from its BS or when the relative traffic loading of different cells require adjusting) **(pg. 1, paragraph [0005])**,

wherein the device comprises means for defining a uplink transmission frame timing with reference to the downlink transmission frame timing of a reference cell

selected from said active set (defining a limitation that the reporting range must be symmetric about the downlink timing reference, this enables the uplink timing reference to be offset from it by To+tau, where tau is an additional offset which could be calculated from received signals rather than being predetermined) **(pg. 4, paragraph [0045]),**

wherein the device is adapted, when the reference cell is removed from the active set, to:

define a virtual reference cell, the timing of which is defined with reference to one or more of the cells remaining in the active set, such that the timing of the virtual reference cell corresponds to the timing of the previous reference cell (in some soft handover situations, when a reliable down command is received from the earliest (first reference cell) there is no need to wait for further power control commands to arrive and it may increase the power based on any reliable down command received later, the offset or the timing reference has the advantage of relating the uplink transmit timing to the signals actually received in the active set, this reduces the reporting the BSs for being outside the valid range (it can be concluded that as the MS receives commands form the BS it will calculate the offset based on the reporting range of each BSs or all of them and the MS could be permitted in soft handover to offset the UL from the first significant path)) **(pg. 1 paragraph [0005], pg. 2 paragraphs [0030], [0031], pg.4 paragraph [0045], [0052], pg.5 paragraph [0071])**: and to

define the uplink transmission frame timing relative to the timing of the virtual reference cell (define a limitation that the reporting range must be symmetric about all

the downlink timing reference. This enables the uplink timing reference to be offset form it by To +tau chips where tau is an additional offset which could be calculated from the actual spread of signals received) **(pg. 4, paragraph [0045]).**

Regarding claim 9, Moulsley discloses a method as claimed in claim 8, wherein the uplink transmission frame timing is defined to be a fixed time after the virtual reference cell timing (in normal operation, the uplink timing reference is typically a predetermined offset To from reception of the first significant signal path from a BS, with To defined to be 1024 plus/minus 1.5 chips) **(pg. 4, paragraph [0039]).**

Regarding claim 10, Moulsley discloses a method as claimed 8, for use in UMTS, wherein the uplink transmission frame timing is defined to be To (=1024 chips) after the virtual reference cell timing (in normal operation, the uplink timing reference is typically a predetermined offset To from reception of the first significant signal path from a BS, with To defined to be 1024 plus/minus 1.5 chips) **(pg. 4, paragraph [0039]).**

Regarding claim 11, Moulsley discloses a method as claimed in claim 8, wherein the virtual reference cell timing is defined with reference to the active cell which first joined the active set (setting the uplink transmit timing according to the dimensions of the reporting range (the reporting range is entirely positive with the respect to To, the frequency of reporting will be minimized by adjusting the uplink timing to To chips after the first significant path of the first BS to be received)) **(pg. 4 paragraph [0061], [0062], pg.5 paragraph [0063]).**

Regarding claim 12, Moulsley discloses a method as claimed in claim 8, wherein the virtual reference cell timing is defined with reference to the active cell whose

downlink transmission timing most closely corresponds to the downlink transmission timing of the previous reference cell (such a means of calculating the uplink transmit timing to the signals actually received, if the signals from all the received very close together or very widely dispersed, this approach would help to keep the receive timing centrally within the reporting range, thus minimizing the frequency of reporting BSs for being outside the valid range, and the MS makes a change in power based on the initial estimate, however after receiving later signals the power can be changed) **(pg. 2, paragraph [0030] [0031], pg. 4, paragraph [0054]).**

Regarding claim 13, Moulsley discloses a method as claimed in claim 8, wherein the virtual reference cell timing is defined with reference to the active cell from which the strongest signal is being received such a means of calculating the uplink transmit timing to the signals actually received, if the signals from all the received very close together or very widely dispersed, this approach would help to keep the receive timing centrally within the reporting range, thus minimizing the frequency of reporting BSs for being outside the valid range (it is known in the art that as the MS drifts away from the BS the signal strength decreases), and the MS makes a change in power based on the initial estimate, however after receiving later signals the power can be changed) **(pg. 2, paragraph [0030] [0031], pg. 4, paragraph [0054], pg.1 paragraph [0005]).**

Regarding claim 14, Moulsley discloses a method as claimed in claim 8, wherein the virtual reference cell timing is defined with reference to the average timing of all of the cells in the active set (the limitation that the reporting range must be symmetric about the downlink timing reference, the offset can be calculated based on the weighted

average of the number of chips between the arrival of the first significant path of the first BS in the active set and the first significant path of all BSs in the active set) **(pg. 4 paragraphs [0045], [0051]).**

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Celeste L. Loftin whose telephone number is 571-272-2842. The examiner can normally be reached on Monday thru Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CL

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER